REMARKS

In the final Office Action dated September 18, 2009, it is noted that claims 1 and 3-10 are pending, and claims 1 and 3-10 stand rejected. Claims 1 and 4, 7-9 have been amended to clarify certain aspects of the subject matter. Support for the amendments are found in the specification as originally filed at least at paragraph 23, page 9 line 21-page 10 line 9; at paragraph 114, page 37 line 11-page 28 line 2; and at paragraph 134, page 44 lines 17-20. No new subject matter has been added. Claims 2 and 11 were previously cancelled.

IDS Considered

The indication (see Examiner-initialed PTO form 1449 mailed with the outstanding Final Office Action dated September 18, 2009) that the Information Disclosure Statement (IDS) as filed on May 6, 2009, and the references listed therein has been considered by the USPTO and is noted with appreciation.

Objection to the Specification

The Office Action objects to the disclosure because a Replacement Sheet for Figure 22 has been entered and designated as "Related Art," and the Office alleges that the description of Figure 22 should have a corresponding entry.

The Applicants includes herewith a replacement paragraph which designates Figure 22 as "RELATED ART" in the Brief Description of the Drawings section. As such, the Applicants respectfully request the withdrawal of this objection.

Claim Rejections under 35 U.S.C. §112, second paragraph

Independent claims 1, 8, and 9 stand rejected under 35 U.S.C. 112, second paragraph as allegedly being indefinite and incomplete and for failing to distinctly point out the subject matter. The Office alleges that the term "accommodated" is a relative term which renders the claim indefinite. The Office also alleges that essential structural cooperative relationships of elements are omitted. In addition, the Office alleges that

essential steps are omitted in independent claims 1, 8, and 9. Furthermore, the Office alleges that there is insufficient antecedent basis in claims 1 and 8 for three listings of "a mobile station." The Office also alleges that claims 8 and 9 omit essential structural cooperative relationships of elements. Claims 3-7 stand rejected for alleged insufficient antecedent basis. Dependent claims 3-7 and 10 also stand rejected since they depend from claims 1 and 9, respectively, and contain the same alleged deficiencies. The Applicants respectfully traverse these rejections.

Claims 1, 8, and 9 are herein amended by replacing the term "accommodated in" with the term "communicating with." The term "communicating with" is not is a relative term which would render the claim indefinite.

Claims 1, 8, and 9 are also amended as per paragraph 6 on page 4 of the Office Action to clarify that each terminal node of the plurality of terminal nodes retains respective management information of a mobile station which is communicating with a terminal node of interest, the management information allowing for transmitting user packets between the mobile station and each terminal node of the plurality of terminal nodes.

Claims 1, 8, and 9 are also amended as per paragraph 7 on page 4 of the Office Action to clarify the allegation of insufficient antecedent basis for the term "a mobile station."

With respect to paragraphs 8 and 9 on page 5 of the Office Action, the Applicants respectfully submit that the rejections to claims 8 and 9 under 35 U.S.C. 112, second paragraph, as allegedly being incomplete for omitting essential structural cooperative relationships of elements have been overcome by the amendments to claims 8 and 9 as discussed above.

With respect to paragraph 10 on page 5 of the Office Action, claims 3-7 have been amended to clarify that the "terminal node" refers to the "terminal node of interest."

The Applicants respectfully submit that the rejections to claims 1 and 3-10 under 35 U.S.C. 112, second paragraph have been overcome and respectfully request the withdrawal of the rejections.

Claim Rejections under 35 U.S.C. §103(a)

Claims 1 and 3-10 stand rejected under 35 U.S.C. 103(a) as allegedly being obvious over US Patent 7,072,329 to Willars et al. (hereinafter referred to as "Willars"). The Applicants respectfully traverse such rejections.

In re Wada and Murphy, Appeal 2007-3733, the BPAI stated that:

> When determining whether a claim is obvious, an examiner must make "a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art." *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added). Thus, "obviousness requires a suggestion of all limitations in a claim." *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (*citing In re Royka*, 490 F.2d 981, 985 (CCPA 1974)). Moreover, as the Supreme Court recently stated, "*there must be some articulated reasoning* with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (quoting In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006) (emphasis added)).

The Applicants' claim 1 requires the following, in part:

> wherein each intermediate node of the plurality of intermediate nodes transfers user data received from any node located from within the mobile communication network, including a top node, an intermediate node, or a terminal node, or received from a different network and addressed to the mobile communication network, by use of a broadcast format to the plurality of terminal nodes, in which the user data is further transmitted to the mobile station subordinate to and managed by the terminal node of interest, based on the management information retained by the terminal node of interest. Emphasis added.

Page 7 of the Office Action alleges that Willars at Fig. 2B and column 9, lines 1-6, discloses the emphasized features of claim 1. The Applicants respectfully submit that Willars at Fig. 2B and column 9, lines 1-6 is completely different from claim 1 and do not disclose "managed by the terminal node of interest, based on the management information retained by the terminal node of interest," as recited in claim 1.

In the Response to Arguments section, at paragraph 22 on page 16 of the Office Action, the examiner agrees that the cited Radio Network Controllers (RNCs) of Willars cannot be the claimed "terminal node(s)." Although the RNCs of Willars may retain

management information of a mobile station, these RNCs clearly are not terminal nodes. Furthermore, Willars does not teach or even suggest the concept that the mobile station is managed by the BS. As such, Willars does not disclose, teach or even suggest that the mobile station is managed by the terminal node based on management information retained by the terminal node of interest.

The Office Action at paragraph 22 on page 16 apparently agrees that Willars does not disclose or even suggest a mobile station managed by a terminal node. As such, the Applicants respectfully submit that the Office has not presented a suggestion of all limitations of claim 1.

The patentable subject matter of claim 1 as described above would not have been obvious to one of ordinary skill in the art in view of Willars. Willars relates to combining different transport technologies in a multi-layer telecommunications system. The technologies of Willars focus on, for example, Asynchronous Transfer Mode (ATM), Internet Protocol (IP), Universal Mobile Telecommunications (UMTS), and UMTS Terrestrial Radio Access Network (UTRAN). For each of these technologies, the mobile station is managed by a central unit such as an RNC. None of these technologies suggest nor makes obvious a terminal node to manage the mobile station. Thus, Willars fails to teach and does not make obvious all features of the Applicants' claim 1. Therefore, the Applicants respectfully submit that claim 1 is allowable over Willars under 35 U.S.C. §103(a) and respectfully request the withdrawal of this rejection.

In addition, in the Response to Arguments section on page 16, paragraph 22 of the Office Action, the Office alleges that the RNCs of Willars correspond to a plurality of intermediate nodes as set forth in claim 1. The Applicants respectfully disagree.

Claim 1 is amended to clarify that each node of the claimed invention performs IP packet routing. In contrast, each RNC of Willars does not perform a routing for each packet. In Willars, an RNC sends packets to a base station device on a channel through which the packet is transmitted to a predetermined terminal. However, the RNC does not perform IP routing. Therefore, the RNC of Willars is not the same or equivalent to an intermediate node of the claimed invention. As such, for this additional reason claim 1 is allowable over Willars under 35 U.S.C. §103(a).

Furthermore, claim 1 recites, in part:

> each terminal node of the plurality of terminal nodes retains respective management information of the mobile station which is communicating with a terminal node of interest. Emphasis added.

In the Response to Arguments section on page 16, paragraph 24, (and also at page 7 of the Office Action), the Office alleges that Willars at col. 11, lines 37-40 discloses the above-emphasized features of claim 1. The Applicants respectfully disagree because Willars apparently only retains management information at a corresponding base station; however, in Willars the management information apparently is not retained in any other base station. At paragraph 24 of the Office Action, the Office seems to imply that when the mobile station registers with only one base station and never moves out of that base station's coverage area, only that base station will retain the management information of the mobile station. The Applicants respectfully submit that this disclosure is different from the claimed invention, which requires that each terminal node of the plurality of terminal nodes retains the management information of the mobile station. In other words, the claimed invention requires more than one terminal node, each of which retains the management information. Therefore, for this additional reason, Willars does not teach or suggest all limitations of claim 1.

It would not have been obvious to one of ordinary skill in the art in view of Willars to require that each terminal node of the plurality of terminal nodes retains the management information of the mobile station because the claimed invention requires the communication system to provide for additional memory resources to retain such information, which teaches away from the principle of minimizing the required resources for maximum efficiency. Therefore, for this additional reason, the Applicants respectfully submit that claim 1 is allowable over Willars under 35 U.S.C. §103(a) and respectfully request the withdrawal of this rejection.

On page 17, paragraph 25 of the Office Action, the Office suggests that the Applicants could possibly mean that the management is kept on a "token" basis and if so, such a limitation is not present in the claims.

The Applicants acknowledge this suggestion with appreciation and respectfully clarify that there is no intention at all to mean that the management is kept on a token basis, and therefore agree with the Office that such a limitation is not present in the claims.

Additionally, claim 1 recites, in part:

> a plurality of intermediate nodes layered in a tree-shape connection structure and provided between the top node and the terminal nodes, the tree-shape connection structure having a network structure in which each node performs IP packet routing and there are no redundant routes for IP packet flow to each terminal node of the plurality of terminal nodes. Emphasis added.

On pages 18-20, paragraphs 27-32 of the Office Action, the Office discusses the IP routing structure of Willars with regard to the claimed invention. The Applicants respectfully submit that Willars is completely different from the claimed invention with respect to whether there is any redundancy in routes through which IP packet routing is performed respectfully point out additional patentable subject matter with regard to this discussion.

Within the 3rd Generation Partnership Project (3GPP) network structure, a route is established through which the IP packets are transferred between a base station device and a Gateway GPRS Support Node (GGSN), in which the GGSN is effectively considered to be the top node. In such a network structure, all IP packets that are transferred to a specific terminal flow via the established route. Based this interpretation, the Applicants agree with the Office that there is no redundancy in the IP packet flow.

However, in contrast to the claimed invention, in the network structure of Willars (which uses the 3GPP network structure), each node transfers IP packet data via a set route without performing IP packet routing. This is completely different from the Applicants' claimed invention, which requires that each node performs IP packet routing and there are no redundant routes for IP packet flow to each terminal node of the plurality of terminal nodes. Under the Applicants' claimed invention, each node transfers all IP packets to all base stations without establishing a route. In other words,

each node performs IP packet routing. As such, for this additional reason, Willars does not teach or suggest all limitations of claim 1.

In addition, it would not have been obvious to one of ordinary skill in the art in view of Willars to require that each node performs IP packet routing and there are no redundant routes for IP packet flow to each terminal node of the plurality of terminal nodes. This is because Willars teaches the efficient interworking of differing transport technologies in a telecommunications system, whereby the claimed invention would require additional resources in order for each node to perform IP packet routing. Therefore, for this additional reason, the Applicants respectfully submit that claim 1 is allowable over Willars under 35 U.S.C. §103(a) and respectfully request the withdrawal of this rejection.

Independent claims 8 and 9 are different from claim 1. For example, claim 8 is directed towards a mobile communication system transmitting information either addressed to or originated from a mobile station on a packet communication basis between hierarchically disposed nodes. Claim 9 is directed towards a node included in a mobile communication system. Although different from claim 1, independent claims 8 and 8 also include patentable subject matter of claim 1 as discussed above. Accordingly, the Applicants essentially repeat the above arguments for claim 1 and apply them to the specific features recited in independent claims 8 and 9. As such, the Applicants respectfully submit that the rejections to claims 8 and 9 under 35 U.S.C. 103(a) over Willars is unfounded and should be withdrawn.

Each of dependent claims 3-7 and 10 depends upon allowable independent base claim and inherits all of the features of its respective independent base claim. Thus, each dependent claim is patentable for at least the same reasons discussed above with respect to its independent base claim, upon which it depends, with each dependent claim containing further distinguishing patentable features.

It is respectfully submitted that the rejections of claims 1 and 3-10 under 35 U.S.C. §103(a) have been overcome. Hence, withdrawal of the rejections and early allowance of the claims are respectfully requested.

Conclusion

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, the claims are in condition for allowance, which action is respectfully requested. If for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper, not already paid through an EFS-Web filing, may be charged to Deposit Account No. 50-3894. Any overpayment may be credited to Deposit Account No. 50-3894.

Respectfully submitted,
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